

WHAT IS CLAIMED IS:

1. An AC adaptor separated from an electronic apparatus, and having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to the electronic apparatus, comprising:

a first constant-current control device which performs first constant-current control for charging said battery;

- 10 a second constant-current control device which performs second constant-current control for supplying an electric current necessary to drive said electronic apparatus; and

a voltage detecting device which detects a voltage drop of the DC output,

wherein if the output voltage becomes lower than a preset value, the second constant-current control for supplying the electric current necessary to drive said electronic apparatus is performed.

- 20 2. An AC adaptor separated from an electronic apparatus, and having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to said electronic apparatus, comprising:

25 a first constant-current control device which performs first constant-current control for charging said battery;

a second constant-current control device which performs second constant-current control for supplying an electric current necessary to drive said electronic apparatus;

5 a voltage detecting device which detects a voltage drop of the DC output; and

an internal temperature detecting device which detects an internal temperature,

wherein if the internal temperature becomes
10 higher than a preset value, the DC output is shut down or the first constant-current control for charging said battery is performed.

3. An AC adaptor separated from an electronic apparatus, and having a DC output unit which performs
15 outputting under constant-voltage/constant-current control in order to charge a battery connected to said electronic apparatus, comprising:

a first constant-current control device which performs first constant-current control for charging
20 said battery;

a second constant-current control device which performs second constant-current control for supplying an electric current necessary to drive said electronic apparatus;

25 a voltage detecting device which detects a voltage drop of the DC output; and

a timer device which starts when detecting the

electric current necessary to drive said electronic apparatus,

wherein if the constant-current control for supplying the electric current necessary to drive said electronic apparatus continues for not less than a
5 preset time, the DC output is shut down or the first constant-current control for charging said battery is performed.

4. The AC adaptor according to claim 2, further
10 comprising a display device, wherein said display device displays switching from the constant-current control for supplying the electric current necessary to drive said electronic apparatus to the shutting down the DC output, or the constant-current control for
15 charging said battery is performed.

5. The AC adaptor according to claim 3, further comprising a display device, wherein said display device displays switching from the constant-current control for supplying the electric current necessary to
20 drive said electronic apparatus to the state that the DC output is shut down or the constant-current control for charging said battery is performed.

6. An electric current control method for an AC adaptor separated from an electronic apparatus, and
25 having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to the electronic apparatus,

comprising:

a first constant-current control step of performing first constant-current control for charging the battery;

- 5 a second constant-current control step of performing second constant-current control for supplying an electric current necessary to drive the electronic apparatus; and

a voltage detection step of detecting a voltage
10 drop of the DC output,

wherein if the output voltage becomes lower than a preset value, the second constant-current control step of supplying the electric current necessary to drive the electronic apparatus is performed.

- 15 7. An electric current control method for an AC adaptor separated from an electronic apparatus, and having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to the electronic apparatus,

20 comprising:

a first constant-current control step of performing first constant-current control for charging the battery;

- a second constant-current control step of
25 performing second constant-current control for supplying an electric current necessary to drive the electronic apparatus;

a voltage detection step of detecting a voltage drop of the DC output; and

an internal temperature detection step of detecting an internal temperature,

5 wherein if the internal temperature becomes higher than a preset value, a step of shutting down the DC output, or the step of first constant-current control for charging the battery is performed.

8. An electric current control method for an AC
10 adaptor separated from an electronic apparatus, and having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to the electronic apparatus, comprising:

15 a first constant-current control step of performing first constant-current control for charging the battery;

 a second constant-current control step of performing second constant-current control for
20 supplying an electric current necessary to drive the electronic apparatus;

 a voltage detection step of detecting a voltage drop of the DC output; and

 a timer step which starts when detecting the
25 electric current necessary to drive the electronic apparatus,

 wherein if the constant-current control step of

supplying the electric current necessary to drive the electronic apparatus continues for not less than a preset time, a step of shutting down the DC output, or the first constant-current control step of charging the battery is performed.

9. The method according to claim 7, further comprising a display step, wherein in the display step, switching from the constant-current control for supplying the electric current necessary to drive the electronic apparatus to the shutting down the DC output, or the constant-current control for charging said battery is displayed.

10. The method according to claim 8, further comprising a display step, wherein in the display step, switching from the constant-current control for supplying the electric current necessary to drive the electronic apparatus to the shutting down the DC output, or the constant-current control for charging said battery is displayed.

11. A computer program for allowing a computer to execute an electric current control method for an AC adaptor separated from an electronic apparatus, and having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to the electronic apparatus, comprising:

a first constant-current control step of

performing first constant-current control for charging the battery;

a second constant-current control step of performing second constant-current control for
5 supplying an electric current necessary to drive the electronic apparatus; and

a voltage detection step of detecting a voltage drop of the DC output,

wherein if the output voltage becomes lower than
10 a preset value, the second constant-current control step of supplying the electric current necessary to drive the electronic apparatus is performed.

12. A computer program for allowing a computer to execute an electric current control method for an AC
15 adaptor separated from an electronic apparatus, and having a DC output unit which performs outputting under constant-voltage/constant-current control in order to charge a battery connected to the electronic apparatus, comprising:

20 a first constant-current control step of performing first constant-current control for charging the battery;

a second constant-current control step of performing second constant-current control for
25 supplying an electric current necessary to drive the electronic apparatus;

a voltage detection step of detecting a voltage

drop of the DC output; and

an internal temperature detection step of
detecting an internal temperature,

wherein if the internal temperature becomes
5 higher than a preset value, a step of shutting down the
DC output, or the step of first constant-current
control for charging the battery is performed.

13. A computer program for allowing a computer to
execute an electric current control method for an AC
10 adaptor separated from an electronic apparatus, and
having a DC output unit which performs outputting under
constant-voltage/constant-current control in order to
charge a battery connected to the electronic apparatus,
comprising:

15 a first constant-current control step of
performing first constant-current control for charging
the battery;

a second constant-current control step of
performing second constant-current control for
20 supplying an electric current necessary to drive the
electronic apparatus;

a voltage detection step of detecting a voltage
drop of the DC output; and

a timer step which starts when detecting the
25 electric current necessary to drive the electronic
apparatus,

wherein if the constant-current control step of

supplying the electric current necessary to drive the
electronic apparatus continues for not less than a
preset time, a step of shutting down the DC output, or
the step of first constant-current control for charging
5 the battery is performed.

14. A computer-readable recording medium
characterized by recording computer programs cited in
claim 11.

15. A computer-readable recording medium
10 characterized by recording computer programs cited in
claim 12.

16. A computer-readable recording medium
characterized by recording computer programs cited in
claim 13.

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